### PROJECT 10073 RECORD CARD

1. DATE	. LOCATION		12. CONCLUSIONS	
16 Jan 51	Oak Ridge Tenn	Oak Ridge Tenn		
3. DATE-TIME GROUP  Local	4. TYPE OF OBSERVATION  EXGround-Visual  D Air-Visual  6. SOURCE	D Ground-Radar  D Air-Intercept Radar	Probably Balloon  Was Aircraft Probably Aircraft Possibly Aircraft Was Astronomical Probably Astronomical Possibly Astronomical Possibly Astronomical	
7. LENGTH OF OBSERVATION 5 min	8. NUMBER OF OBJECTS	9. COURSE Hovered	Orher Styler Insuff Date Insuff Date Insufficient Date for Evaluation Unknown	
Shape- Light- Color - Uunsually Bright - Speed-Stationary. First thought to be A/C but was not moving. Plant authorityies checked but nothing was found to account for the sighting.  See Case 21 Jan 51 - Same location)		viewed throught right rear window.		

ATIC FORM 329 (REV 26 SEP 52)

## PROJECT 10073 RECORD CARD

1. DATE  21 Jan 51  3. DATE-TIME GROUP  Local 1620	2. LOCATION Oak Ridge, Tenn 4. TYPE OF OBSERVATION  Ground-Visual Ground-Radar E Air-WYCCX Radar D Air-Intercept Radar 6. SOURCE		O Was Astronomical O Probably Astronomical O Possibly Astronomical
S. PHOTOS  D Yes  M No			
7. LENGTH OF OBSERVATION  Three radar runs	8. NUMBER OF OBJECTS	9. COURSE Not given	Other Ground Target  Insufficient Data for Evaluation Unknown
10. BRIEF SUMMARY OF SIGHTING F-82 attempted to intercept an unknown target. Three passes were made at the object but since it was over Oak Ridge the pass could not be completed. Weather data indicates a double inversion existed in the air.		Explanation is "ducting".caused by the inversion. Probable source being a grout target.	

ATIC FORM 329 (REV 26 SEP 52)

UNCLASSIFIED



DETACHMENT "A"

52ND FIGHTER ALL WEATHER GROUP

McGhee-Typon Airport

Dox 97, Alcoa, Tennessee

CLASSIFIED SECEST
BY AUTHORITY OF:
AFR 205-1
25 Jan 51 EAS
DATE TO

25 January 1951

SUBJECT: Report on indicated airborne target over Oak Hidge Area.

TO : Knoxville OSI Detachment P. O. Box 401 Knoxville, Tenn

On 21 January 1951 at 1620 o'clock while on a practice flight of two F-32 aircraft the radar operator of aircraft 46-472, E intercented an indication of an cirborne target at a range of 18a yards. He notified the pilot, of same who notified GCI. GCI gave the go ahead to intercept same. The radar set was "Locked on" to the target and the run began. The interpetation on the "C" scan (elevation) indicated the target was varying altitude between ten and twenty-five degrees above the intercapting aircrafts altitude which was 7m feet. At a range of approximately Em yards the indication on elevation began to descend until the limit of depression of the antenna was reached. At this point the pillot dropped into a nosa down altitude and the target was again picked up and indicated the K-10 area plant of Cak Ridge. The intercepting aircraft then broke off the intercept and returned to Lenoir City Area where it was to be "target" for the other aircraft. On the mext run in the area the "target" was again indicated and a second run made on same. At the completion of the flying period the radar observer requested one more run over the area to again check for the same type indication. The pilot started the run from approximately 20 miles and again at 17.5m yards the indication was received and locked on to. This time the run was completed to the limit of the antenna depression and then broken off because the line of flight again was across the Cak Ridge Plant. This phenomena was duly reported to CCI and CSI.

s/ \_\_\_\_\_\_

CERTIFIED TRUE COPY:

Knoxville, Tennessee

DOWNGRADED AT 3 YEAR INTERVALS; DECLASSIFIED AFTER 12 YEARS. DOD DIR 5200.10



## UNCLASSIFIED

SUMMARY OF INFORMATION		1 February 1951
PREPARING OFFICE  111th CIC Detachment, FAO #8, P. O.		essee
CEJECTS SIGHTED OVER CAK RIDGE, THIRTSSES (16 & 21 January 1951)	OF SOURCE:  COMPLETELY RELIABLE A  USUALLY RELIABLE	OF INFORMATION:  CONFIRMED BY OTHER SOURCES . 1 PROBABLY TRUE

SUMMARY OF INFORMATION

(Refer S/I Subject as above dated 20 January 1951 pertaining to the sighting at 2145 hours on 16 January 1951)

At approximately 1645 hours on 16 January 1951, an unusually brilliant object was sighted by five persons driving in the "Control Zone" of the Atomac Energy Project, Cak Ridge, Tennessee. Attached hereto is the statement concerning this phenomenon. The weather at the time of this sighting is substantially the same as reported in the previous report for 15 January 1951, as referred to above.

Records of the 663rd AC & W Squadron, (Radar), McChee Tyson Airport, Knowville, Tonnessee reveal that no directaft were in the vicinity at the time of the observation, and the radar site was receiving no interference.

At 1620 hours on 21 January 1951, a radar sighting of an unidentified object over Cak Ridge, Tennessee was made by the airborne radar equipment installed in an F-82 fighter mircraft of the 5th all Fighter Equadron, 52nd All Fighter Group, EcGhee Tyson, Airport, Knoxville, Tennessee. This radar interference was received by the airborne radar as the aircraft approached the K-10 Plant Area in the "Controlled Zone" of the Atomic Energy Project, Cak Ridge, Tennessee. The fighter aircraft attempted interceptions of this target from various angles and found that the source of the interference uninated from the area of the K-10 Plant. No visual reference to anything in the sky was reported by either the pilot or the radar operator of the F-82 aircraft.

The weather at the time of this incident is reportedly: "Partly cleady, with East winds at seven (7) miles per hour. Temperature 58 degrees, and dewpoint 19 degrees. No balloons or other weather apparatus was in the sky at this time. Between the hours 1545 and 1615, the wind was variable from south to northeast at from calm to eleven (11) miles per hour.

Attached hereto is a copy of the letter submitted by Lat Licutement, U.S.A.F., concerning this phenomenon. (NOTE: The letter "m" used in this letter denotes "thousand").

SOURCE: 663rd AV & C Radar Squadron, NoGhee Tyson Airpolt, Knoxville, Tenn.

Sth AV Righter Squadron, Knoxville, Tenn.

Atomic Energy Commission Neather Eureau, Oak Ridge, Tennessee.

Five persons listed on inclosure, Cak Ridge, Tennessee

OSI Office, Knoxville, Tennessee

DOWNGRADED AT 3 YEAR INTERVALS

DISTRIBUTION

3 cc - Hq, Third Army, Ft McPherson, Ca

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578-20#10FINES

DECLASSIFIED AFTER 12 YEARS.

DOD DIR 5200.10

HEADQUARTERS THIRD ARMY

FORT MCPHERSON, GEORGIA

Office of the Assistant Chief of Staff G-2

9 FEB 1951

1 1 1 5 1957

AJACI-5 360.33

Unconventional Aircraft SUBJECT:

Director of Intelligence TO: Fourteenth Air Force Robins AFB, Macon, Georgia

Inclosed herewith is summary of information re objects sighted over Oak Ridge, Tennessee.

1 Incl: 3/I dtd 1 Feb 51

H. E. Boroks, Col for HENRY M. ZELLER Colonel, GSC AC of S, G-2

Int 360

1st Ind

Hq Fourteenth Air Force, Robins Air Force Base, Georgia.

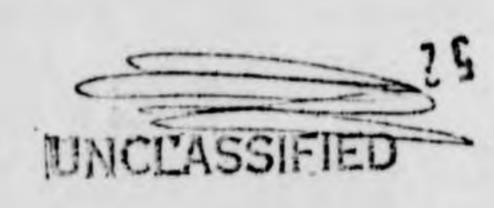
TO: Commanding General, Air Materiel Command, Wright-Patterson AFB, Dayton, Ohio. ATTN: MGIS

Forwarded in accordance with letter, Headquarters USAF, 8 Sep 50, subject: "Reporting of information on unconventional aircraft."

FOR THE COMMANDING GENERAL:

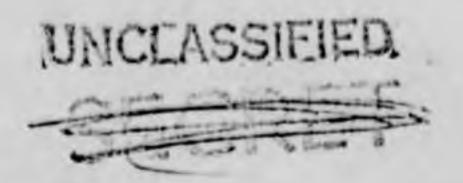
11/ Sude

Earlier rest on This answered (TCB) by endousancest



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DOUD DIR 5200.10

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# HEADQUARTERS AIR MATERIEL COMMAND

WRIGHT-PATTERSON AIR FORCE BASE DAYTON, OHIO J. L. Raba

MCIAXA-la/JJR/ns

MCTAXA

VELOPE TO COMMANDING

COMMAND, ATTENTION FOL-

SUBJECT: Unconventional Aircraft, ATI Project No. 10073

TO:

Director of Intelligence
Headquarters, USAF
ATTN: Evaluation Division
Technical Capabilities Branch
Washington 25, D.C.

- 1. It is considered highly probable that the radar target detected three times by the airborne radar set in the F-82 aircraft on 21 January was a ground target in the vicinity of the X-10 plant.
- 2. The peculiar phenomena of having the target first appear at an altitude above the interceptor and then below the aircraft is considered to be due to abnormal refraction of the radar electromagnetic emanations. The airborne radar transmitted energy was refracted to the ground by a "temperature and/or moisture duct" that was located at about the same altitude as the interceptor; more details are given in paragraph 3 below. When the interceptor closed on the target, the target first appeared to be above the interceptor until the apex of the bent radar "rays" was reached, and after that the target appeared below the interceptor.
- 3. A check with the local AMC base weather office indicates that the Nashville weather station reported the following temperature data for 2100 EST, 21 January 1951:

#### Altitude

Temperature Conditions

0 to 2000 ft 2000 to 5000 ft 5000 to 8000 ft 8000 to 11000 ft Above 11000 ft

No Change Six degree increase Normal decrease in temp/increased altitude Three degree increase Normal decrease in temp/increased altitude

> DOWNGRADED AT 3 YEAR INTERVALS; DECLASSIFIED AFTER 12 YEARS. DOD DIR 5200.10



51S-20281-C

## ROUTING AND R

Use this form for inter-office correspondence within headquarters.

Number all comments consecutively.

ORD SHEET

Use authorized office symbols to designate addressor and addressee.

SEC

AUTH: CG intring of dictator and typist, telephone number and location to right of signature.

Note warning signal at lower left of form. INITIALS: J.E. Libbert, Maj. USAF Remaining space is sufficient only for DATE: Self-translate by horizontal lines across page.

SUBJECT Project 10073

MCIAXA-la

FROM MCIAXE

DATE 1 6 FEB 1951 COMMENT NO. 1

- 1. It is suggested that substantially the following be used in replying to the attached letter, insofar as the report on the radar detected target is concerned:
  - \*1. It is considered highly probable that the radar target detected three times by the airborne radar set in the F-82 aircraft on 21 January was a ground target in the vicinity of the X-10 plant.
  - \*2. The peculiar phenomena of having the target first appear at an altitude above the interceptor and then below the aircraft is considered to be due to abnormal refraction of the radar electromagnetic emanations. The The airborne radar transmitted energy was refracted to the ground by a "temperature and/or moisture duct" that was located at about the same altitude as the interceptor; more details are given in paragraph 3 below. When the interceptor closed on the target, the target first appeared to be above the interceptor until the apex of the bent radar 'rays' was reached, and after that the target appeared below the interceptor.
  - 3. A check with the local AMC base weather office indicates that the Nashville weather station reported the following temperature data for 2100 EST, 21 January 1951:

### Altitude

Temperature Conditions

0 to 2000 ft 2000 to 5000 ft 5000 to 8000 ft 8000 to 11000 ft Above 11000 ft No change Six degree increase Normal decrease in temp/increased altitude Three degree increase Normal decrease in temp/increased altitude

The normal atmospheric temperature condition is that temperature decreases nearly linearily with increase in altitude. The above data indicates that two inversion layers existed, one above the interceptor and one below, at about the time the airborne radar target over the Oak Ridge area was reported. While complete and accurate effects of temperature inversion are not thoroughly understood, it is considered that this effect caused the detection of a ground target to appear to be airborne, first above and then below the interceptor as the interceptor closed on the target.

1 Incl Cy Ltr, 2/7/51 fr Dir Spec Invest W/Cy Ltr 52nd FAWG, 1/25/51 and Ept of Sighting JOHN E. LIBBERT

Major, USAF

Chief, Electronics Section Technical Analysis Division

Intelligence Department

55170 .

B 263A P A-17

518-20DGWNGRADED AT 3 YEAR INTERVA

DOD DIR 5200.10

UNCLASSIFIED

ALRON J. L. R. P.

Ltr AMC to TCB, Hq., USAF," Unconventional Aircraft,

The normal atmospheric temperature condition is that temperature decreases nearly linearily with increase in altitude. The above data indicates that two inversion layers existed, one above the interceptor and one below, at about the time the airborne radar target over the Oak Ridge area was reported. While complete and accurate effects of temperature inversion are not thoroughly understood, it is considered that this effect caused the detection of a ground target to appear to be airborne, first above and then below the interceptor as the interceptor closed on the target.

4. In view of the lack of factual evidence relative to the visual sightings covered in the report, no positive explanation can be offered, however, there are several possible explanations for this sighting.

FOR THE COMMANDING GENERAL:

1 Incl Cy Ltr 2-7-51 fr Dir Spec Invest w/incls BRUNOW W. FEILING Colonel, USAF Chief, Technical Analysis Division Intelligence Department

